

Laparoscopic Cholecystectomy: A Retrospective Study

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Background: Laparoscopic Cholecystectomy (LC) has become the gold standard treatment for gallstone disease ever since its widespread acceptance in the early 90s. LC is a safe procedure that is very commonly performed.

Objective: To evaluate the standard care of LC in terms of morbidity, mortality, complication and length of hospital stay.

Setting: Surgical Department, King Hamad University Hospital, Bahrain.

Design: A Retrospective Study.

Method: LC patients were reviewed from July 2012 to September 2014. The following data were documented: personal characteristics, hospital stay both pre and postoperative complications, conversion to open, biliary injury and wound infection.

Result: Two hundred thirty-nine patients had LC; 185 (77.41%) were females and 54 (22.59%) were males. The mean age of patients was 38.71; the youngest patient was 17 years and the oldest was 71 years. The technique of 4-port standard LC was used on 232 (97.07%) patients and 7 (2.93%) patients had a single port LC. Seven (2.93%) LC were converted to open, 6 due to distorted anatomy and the other was due to vascular injury. Six (2.51%) patients had wound infection and 2 (0.83%) had biliary tract injury. The mean hospital stay was 3.23 days. There was no mortality recorded during the study.

Conclusion: LC is a safe procedure. The standard of care of LC in this study is well within the accepted values in other studies.

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Gallstone disease is a significant burden on healthcare systems globally; the incidence rate is 10%-15%¹. Gallstone disease necessitating the need for cholecystectomy has a variable presentation, from simple biliary colic to acute pancreatitis. Since the introduction of Laparoscopic Cholecystectomies (LC) in surgical practice in the 1990s, it has become the treatment of choice for many patients with symptomatic cholelithiasis². In the United States, more than 90% of Cholecystectomies are done laparoscopically³. LC is associated with

shorter hospital stay, convalescence and less complication rate compared to open cholecystectomies⁴.

The aim of this study is to evaluate the standards care of LC in terms of morbidity, mortality, complication and length of hospital stay.

METHOD

All patients aged 15-80 who underwent LC from July 2012 to September 2014 were included in the study. This includes single port LC, both elective and emergency.

Personal characteristics including age, gender and comorbidities were documented. Ultrasound findings, mode of admission and intraoperative and postoperative complications were also documented. The data was entered and analyzed using a spreadsheet program.

RESULT

Two hundred thirty-nine LC were performed from July 2012 to September 2014, 185 (77.41%) were females, 54 (22.59%) were males. The mean age of patients was 38.71; the youngest patient was 17 years and the oldest was 71 years. The technique of 4-port standard LC was used on 232 (97.07%) patients while 7 (2.93%) patients had a single port LC. The seven were carefully selected to suit single port LC. The indication were as follows: ninety-eight (41.01%) was due to cholelithiasis, 67 (28.03%) was due to acute cholecystitis, 45 (18.83%) was due to chronic cholecystitis, 18 (7.53%) was due to biliary pancreatitis, and 11 (4.60%) was due to obstructive jaundice. Four (1.67%) patients had polyps causing their biliary disease rather than gallstones.

One hundred and fifty-five (64.85%) patients were admitted electively while 84 (35.15%) were admitted through the emergency department and underwent LC during the same admission period, see table 1.

Table 1: Personal Data, Indications and Mode of Admission

Gender	Female	185 (77.41%)
	Male	54 (22.59%)
	Total	239 (100%)
Indication	Cholelithiasis	98 (41.01%)
	Acute Cholecystitis	67 (28.03%)
	Chronic Cholecystitis	45 (18.83%)
	Biliary Pancreatitis	18 (7.53%)
	Obstructive Jaundice	11 (4.60%)
	Total	239 (100%)
Mode of Admission	Elective	155 (64.85%)
	Emergency	84 (35.15%)
	Total	239 (100%)

No mortality was recorded. Seven (2.93%) patients were converted to open; six (2.51%) intraoperatively due to distorted anatomy and adhesions; the seventh was due to vascular injury. Two (0.83%) biliary injuries were recorded, both were re-operated, see table 2.

In addition, one patient had an anaphylactic reaction upon administration of anesthetic medication and was transferred to the Intensive Care Unit.

Table 2: Complication Benchmark Comparison

Complications	KHUH	International Studies
Conversion to Open	7 (2.93%)	5.2%
Biliary Injury	2 (0.83%)	0.3%-2.7%
Readmission	6 (2.51%)	
Surgical Site Infection	6 (2.51%)	

Six (2.51%) patients were readmitted postoperatively for various reasons and 6 (2.51%) surgical site infections were documented. Seven (2.93%) endoscopic retrograde cholangiopancreatography (ERCP) were performed, 5 preoperatively and 2 postoperatively. The mean hospital stay was 3.23 days. The majority of patients were discharged on the first postoperative day.

DISCUSSION

Kurt Semm et al began using the laparoscopic approach to treat gynecological disorders in the 1970s. In 1982, Semm developed “laparoscopic appendectomy” which was the first abdominal surgery performed under a laparoscopic approach. In 1985, Erich Mühe performed the earliest form of LC. Dr. Mühe performed most LC without the use of pneumoperitoneum⁵.

LC is associated with decreased postoperative pain and the need for analgesics, short hospital stay and improved patient satisfaction with the cosmetic result^{6,7}.

LC is currently the most commonly performed major abdominal procedure in Western countries⁸. In the United States, approximately 20 million people (10%-20% of adults) have gallstones⁹.

The estimated incidence of bile duct injury in LC ranges from 0.3%-2.7%^{10,11}. The incidence of bile duct injury in this study was 0.84%, which is well within the acceptable range. A recent study which included 43,821 LC found the overall rate of conversion to open was 5.2%¹²⁻¹⁴. Our study showed that 2.93% incidence of conversion to open. No mortality was recorded in our study; other studies revealed that the mortality rate of LC is 0.22%-0.4%^{15,16}.

The possibility and feasibility of elective day-case LC where patients are admitted and discharged on the same day should be considered. Further multicentric prospective comparative study of LC is recommended.

CONCLUSION

LC is a safe procedure. The standard of care for LC procedure in this study is within the rates of other studies. Continuous monitoring would maintain these standards.

Author Contribution: All authors share equal effort contribution towards (1) substantial contribution to conception and design, acquisition, analysis and interpretation of data; (2)

drafting the article and revising it critically for important intellectual content; and (3) final approval of manuscript version to be published. Yes.

Potential Conflicts of Interest: None.

Competing Interest: None.

Sponsorship: None.

Submission Date: 9 June 2015.

Acceptance Date: 12 July 2015.

Ethical Approval: Approved by Research and Ethics Committee, King Hamad University Hospital, Bahrain.

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